FEDERAL SUPPLY CLASS
6145

RATIONALE

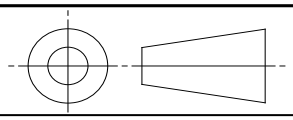
THE AE8D COMMITTEE HAS DETERMINED THIS DOCUMENT WILL NO LONGER BE SUBJECTED TO PERIODIC REVIEWS FOR CURRENCY. THERE ARE NO QUALIFIED SUPPLIERS.

STABILIZED NOTICE

THIS DOCUMENT HAS BEEN DECLARED "STABILIZED" BY THE SAE AE-8D WIRE AND CABLE COMMITTEE AND WILL NO LONGER BE SUBJECTED TO PERIODIC REVIEWS FOR CURRENCY. USERS ARE RESPONSIBLE FOR VERIFYING REFERENCES AND CONTINUED SUITABILITY OF TECHNICAL REQUIREMENTS. NEWER TECHNOLOGY MAY EXIST.

For more information on this standard, visit
https://www.sae.org/standards/content/AS22759/58A/

THIRD ANGLE PROJECTION



ISSUED 2016-06 STABILIZED 2021-08

CUSTODIAN: AE-8/AE-8D

PROCUREMENT SPECIFICATION: AS22759

SAE INTERNATIONAL

AEROSPACE STANDARD

WIRE, ELECTRICAL, FLUOROPOLYMER-INSULATED, CROSS-LINKED MODIFIED ETFE, LIGHTWEIGHT, NICKEL COATED, EXTRA HIGH STRENGTH COPPER ALLOY, 200 °C, 600 VOLT, ROHS

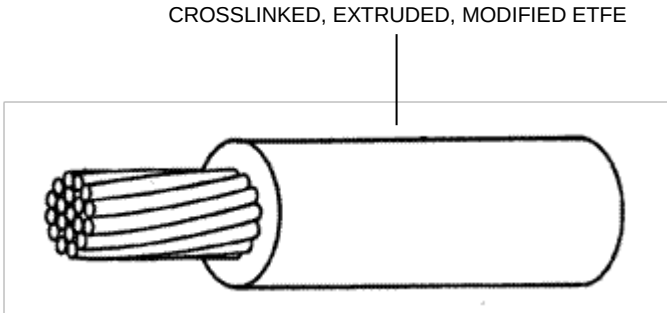
AS22759™/58

REV. A

TO PLACE A DOCUMENT ORDER: **Tel: 877-606-7323 (inside USA and Canada)** **Tel: +1 724-776-4970 (outside USA)**
Fax: 724-776-0790 **Email: CustomerService@sae.org** **SAE WEB ADDRESS: http://www.sae.org**

NOTICE

THE COMPLETE REQUIREMENTS FOR PROCURING THE PRODUCT DESCRIBED HEREIN SHALL CONSIST OF THIS DOCUMENT AND THE LATEST ISSUE OF AS22759.



ETFE – ETHYLENE TETRAFLUOROETHYLENE
CONDUCTOR – STRANDED NICKEL COATED EXTRA HIGH STRENGTH COPPER ALLOY

FIGURE 1 – AS22759/58 CONFIGURATION

TABLE 1 - CONSTRUCTION DETAILS FOR FINISHED WIRE

PART NO. 1/	WIRE SIZE	STRANDING (NUMBER OF STRANDS X SIZE GAUGE OF STRANDS) 2/	DIAMETER OF STRANDED CONDUCTOR (INCHES) 2/		FINISHED WIRE		
			(MIN)	(MAX)	RESISTANCE AT 20 °C (68 °F) (OHMS/1000 FT) MAX	DIAMETER (INCHES)	WEIGHT (LB/1000 FT) (MAX)
M22759/58-30-*	30	7 X 38	.0117	.0134	129.6	.024 ± .002	.660
M22759/58-28-*	28	7 X 36	.0147	.0164	79.0	.027 ± .002	.910
M22759/58-26-*	26	19 X 38	.0184	.0204	49.4	.032 ± .002	1.40
M22759/58-24-*	24	19 X 36	.0231	.0254	30.1	.037 ± .002	2.00
M22759/58-22-*	22	19 X 34	.0293	.0314	18.6	.043 ± .002	2.90
M22759/58-20-*	20	19 X 32	.0373	.0404	11.4	.050 ± .002	4.40

1/ PART NUMBER: THE ASTERISKS IN THE PART NUMBER COLUMN OF TABLE 1 SHALL BE REPLACED BY COLOR CODE DESIGNATORS IN ACCORDANCE WITH MIL-STD-681. EXAMPLE: M22759/58-20-93 IS A 20 AWG WHITE WITH ORANGE STRIPE.
2/ CONDUCTOR SHALL CONFORM TO AS29606 TYPE NCS SMALL DIAMETER NICKEL COATED EXTRA HIGH STRENGTH COPPER ALLOY CONDUCTOR.

REQUIREMENTS: ALL REQUIREMENTS SHALL CONSIST OF THIS DOCUMENT AND THE LATEST ISSUE OF AS22759.

1. WIRE CONSTRUCTION:

   WIRE CONSTRUCTION SHALL BE IN ACCORDANCE WITH FIGURE 1 AND TABLES 1, 2, 3, AND 4.

2. WIRE PERFORMANCE RATING:

   TEMPERATURE RATING: 200 °C (392 °F) MAXIMUM CONDUCTOR CONTINUOUS TEMPERATURE.

   VOLTAGE RATING: 600 VOLTS (RMS) AT SEA LEVEL. THIS INSULATION SYSTEM HAS BEEN USED IN AEROSPACE APPLICATIONS USING 115 VOLTS (PHASE TO NEUTRAL), 400 HERTZ AC AND 28 VOLTS DC. VERIFICATION OF THE SUITABILITY OF THIS PRODUCT FOR USE IN OTHER ELECTRICAL SYSTEM CONFIGURATIONS IS THE RESPONSIBILITY OF THE USER.

3. MATERIALS AND PHYSICAL PROPERTIES:

   SEE AS22759 FOR MATERIAL REQUIREMENT. MATERIALS USED IN THE MANUFACTURE OF THESE PRODUCTS SHALL COMPLY WITH THE RESTRICTION OF HAZARDOUS SUBSTANCES DIRECTIVE 2002/95/EC.

4. FINISH WIRE INSULATION PROPERTIES:

   FINISH WIRE INSULATION PROPERTIES SHALL BE IN ACCORDANCE WITH TABLE 2.

TABLE 2 - FINISHED WIRE INSULATION PROPERTIES REQUIREMENTS

INSULATION PROPERTIES	
IMPULSE TEST VOLTAGE	8.0 KILOVOLTS (PEAK)
HIGH FREQUENCY TEST VOLTAGE	5.7 KILOVOLTS (RMS)
CROSSLINK PROOF	300 °C ± 3 °C (572 °F ± 5.4 °F), 7 HOURS
INSULATION BLOCKING	230 °C ± 3 °C (446 °F ± 5.4 °F)
SHRINKAGE	230 °C ± 3 °C (446 °F ± 5.4 °F) MAXIMUM CHANGE .125 INCHES
ELECTRICAL RESISTANCE (IR)	5000 MEGOHMS (MIN)-1000 FEET
ELECTRICAL SURFACE RESISTANCE	500 MEGOHMS - INCHES (MIN)
WET DIELECTRIC VOLTAGE	2500 VOLTS (RMS), 60 HERTZ
WALL THICKNESS	.005 INCH (MIN)
INSULATION TENSILE STRENGTH	5000 LBF/IN^2 (MIN)
INSULATION ELONGATION	75% (MIN)
CONTINUOUS LENGTH SCHEDULE	B

5. FINISH WIRE IDENTIFICATION:

   WIRE IDENTIFICATION EXCEPTIONS: NONE

   WIRE IDENTIFICATION DURABILITY: 125 CYCLES (250 STROKES) WITH 500 GRAMS WEIGHT

   STRIPE AND BAND DURABILITY: 125 CYCLES (250 STROKES) WITH 500 GRAMS WEIGHT

6. FINISH WIRE PERFORMANCE:

   FINISH WIRE FIXTURES APPLICABLE TO EACH WIRE SIZE SHALL BE IN ACCORDANCE WITH TABLE 3.